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For: COMPOSITE HOLDING DEVICE

Honorable Commissioner of Patents
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**SUBMISSION OF VERIFIED ENGLISH TRANSLATION
OF THE PRIORITY DOCUMENT**

Sir:

Submitted herewith is a copy of the verified English translation of the Specification, Claims and Abstract, and the Declaration of Hisako Ishido, dated December 20, 2004, that the English translation is a true English translation of the Japanese Application Number 2000-401281 filed December 28, 2000, upon which application the claim for priority is based.

Approval and acknowledgment of receipt are respectfully requested.

Respectfully submitted,

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VERIFICATION

I, Hisako Ishido, do solemnly and sincerely declare:

1. That I am well acquainted with the Japanese and English languages, and
2. That the attached English document is a true English translation from the original text of Japanese Patent Application No. 2000-401281.

And I make this solemn declaration conscientiously believing the same to be true and correct.

Date: December 20, 2004

A handwritten signature in black ink, appearing to read 'Hisako Ishido', written over a horizontal line.

Hisako Ishido



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[Title of the Invention] COMPOSITE HOLDING DEVICE

[Scope of Claim for a Patent]

[Claim 1] A composite holding device, comprising:

a casing for accommodating a plurality of holders for holding media to serve either different or similar purposes;

a supporting section for supporting said holders to be movable in an axial direction in the casing;

a feed mechanism, provided in the casing, for selectively advancing one of the plurality of holders; and

a manipulating mechanism for operating the feed mechanism, to project the tip of one of the plurality of holders out of a fore end opening at the tip of the casing and make usable the tip of one of the plurality of holders,

wherein a supported section of each holder supported by said supporting section is rotatably supported in relation to the supporting section.

[Claim 2] The composite holding device, as set forth in claim 1, comprising a spherical bearing formed between said supporting section and the supported section provided on each of said holders.

[Claim 3] The composite holding device, as set forth in claim 1, wherein said spherical bearing includes a spherical part formed on either one of said supporting section and the supported section provided on a holder and a concave part formed on the other one of said supporting section and supported section provided on the holder to

receive said spherical part.

[Claim 4] The composite holding device, as set forth in any of claims 1-3, wherein said media are selected from a group of media consisting of writing-related media including a pencil lead, an ink, a stick glue, an eraser and a correctional fluid, cosmetic media including a lipstick, an eye pencil, an eyeliner and an eyebrow pencil, and data inputting media including a stylus tip.

[Claim 5] A writing tool comprising a cap into which the composite holding device set forth in any of claims 1 - 4 is built.

[Detailed Description of the Invention]

[0001]

[Technical Field the Invention belongs]

The present invention relates to a composite holding device housing a plurality of holders for holding media for writing-related use (e.g., a pencil lead, an ink, a stick glue, an eraser and a correctional fluid), cosmetic media (e.g., a lipstick, an eye pencil, an eyeliner and an eyebrow pencil) or data inputting media (e.g., a stylus tip) and selectively projecting one of the plurality of holders to make it available for use.

[0002]

[Description of the Related Art]

Known composite holding devices include, for instance, one described in Japanese Patent Publication No. 55-38280. This conventional composite holding device has a sleeve case having a fore end opening, a guide fixed to the rear

end opening of the sleeve case and having two guide grooves extending in the axial direction and opposite each other diametrically, a mechanical pencil element (holder) and a ballpoint element (holder), each having a slider guided by the matching guide groove, and a sleeve acting cam surrounding the guide so as to be rotatable to the guide within a certain angle range and to be capable of transitioning in the axial direction with respect to the guide. The cam has a cam slide face formed on its lower end face to engage with the slider so that the cam, when turning in one direction, causes the tip of one of the two holders to project out of the fore end opening of the sleeve case and, when turning in the other direction, causes this holder to recede and the tip of the other holder to project out of the fore end opening of the sleeve case.

[0003]

[Problems to be solved by the Invention]

However, at the eccentric position away from the axial center of the sleeve case, the mechanical pencil element or the ballpoint element (e.g., which are holders) is accommodated in the sleeve case, whereas the fore end opening of the sleeve case, which is the projecting position of the holder, is on the axial center of the sleeve case, resulting in a positional gap in the radial direction between these positions.

Consequently, in this conventional configuration, as a holder advances, the tip of the holder shifts toward the

fore end opening of the sleeve case in contact with the inner circumferential face of the sleeve case while being forcibly deviated in the radial direction of the sleeve case. As a result, the tip of the holder may be caught by the inner circumferential face of the sleeve case and thereby prevented from projecting out of the fore end opening of the sleeve case. This leads to limited freedom in the choice of the material or the dimensions of the holders because the holders should be made of a flexible material, or some allowance should be given in the length of the holders in the axial direction to make them more bendable.

[0004]

In view of the foregoing and other problems, drawbacks, and disadvantages of the conventional methods and structures, an object of the present invention is to provide a composite holding device enabling a holder, among a plurality of accommodated holders, to be advanced and its tip to be smoothly projected out of the fore end opening of a casing, without being constrained by the material or dimensions of the holders, thereby increasing the freedom in the choice of the materials or the dimensions of the holders.

[0005]

[Means for Solving the Problems]

To achieve the objects stated above and others, according to the present invention described in claim 1, a composite holding device includes a casing for

accommodating a plurality of holders for holding media to serve either different or similar purposes, a supporting section for supporting the holders to be movable in the axial direction in the casing, a feed mechanism, provided in the casing, for selectively advancing one of the plurality of holders, and a manipulating mechanism for working the feed mechanism. The feed mechanism is worked by operating the manipulating mechanism to project the tip of one of the plurality of holders out of the fore end opening at the tip of the casing and to allow the tip of one of the plurality of holders to be used, wherein a supported section of each holder supported by the supporting section is rotatably supported in relation to the supporting section.

[0006]

As one of the plurality of holders is advanced by the working of the feed mechanism, its tip projects out of the fore end opening. Even if in this action there is a deviation between the position of the holder tip when the holder is accommodated in the casing and that of the holder tip when it is projected out of the fore end opening at the tip of the casing in the radial direction, the holder tip can project out of the fore end opening of the casing without causing the holder itself to be substantially bent or meet significant resistance as it abuts the inner circumferential face of the casing because the supported section of the holder rotates in relation to the supporting section. Therefore, since the holders need not be highly

bendable, the material or length of the holders is not subjected to any major constraint, thereby resulting in an enhanced design freedom.

[0007]

Formation of a spherical bearing between the supporting section and the supported section provided on each of the holders would enable the supported section to be rotatably supported by the supporting section. This spherical bearing may include a spherical part formed on either one of the supporting section and the supported section provided on a holder and a concave part formed on the other one of the supporting section and supported section provided on the holder to receive the spherical part.

The media can be selected out of a group of media including writing-related media including a pencil lead, an ink, a stick glue, an eraser and a correctional fluid, cosmetic media including a lipstick, an eye pencil, an eyeliner and an eyebrow pencil and data inputting media including a stylus tip.

[0008]

Furthermore, the composite holding device can be built into a cap of a writing tool.

[0009]

[Mode for Carrying Out the Invention]

Embodiments of the present invention will be described below with reference to the accompanying drawings. Figs. 1-11 illustrate a first embodiment of the present invention.

[0010]

In the drawings, reference numeral 10 denotes a whole writing tool as an example of composite holding device according to the invention. The writing tool 10 is mainly provided with a writing body 12 and a cap 14 detachably covering the holder body 12. The composite holding device is built into the cap 14.

[0011]

Fig. 2 shows an expanded view of the cap 14. The composite holding device built into the cap 14 is mainly provided with a casing 20 for accommodating a plurality of holders 21 and 22 substantially overlapping each other in the axial direction, a supporting section 23 for supporting a plurality of holders 21 and 22 to be movable in the axial direction within the casing 20, a feed mechanism 24, provided in the casing 20, for selectively projecting either one of the plurality of holders 21 and 22, and a manipulating mechanism 26 for working the feed mechanism 24, so that one or the other of the plurality of holders 21 and 22 can be selectively projected for use. The holders 21 and 22 in the illustrated example are two ballpoint stems containing inks differing from each other either in color. The constituent mechanisms will be described in detail below.

[0012]

The casing 20 includes an external sleeve 30, a rear sleeve 32 and a nose 34. The rear end of the rear sleeve 32 is inserted into the external sleeve 30 and fixed there

by adhesion or any other desired binding means so that the rear sleeve 32 and the external sleeve 30 are integrally connected with each other. A base of a clip 36 is pinched between the rear sleeve 32 and the external sleeve 30. The rear sleeve 32, external sleeve 30 and clip 36 also can be integrally formed having a unitary construction. The nose 34 is arranged on a side of the tip of, and to be capable of rotating in relation to, the rear sleeve 32. The nose 34 is threaded onto a threaded part formed on the outer circumferential face of the tip of a slide receptacle 40 arranged within the casing 20, and the nose 34 and the slide receptacle 40 rotate integrally in a state in which the nose 34 is threaded on the slide receptacle 40. The tip of either one of the holders 21 and 22 is selectively projected out of a fore end opening 34a as a fore opening of the casing 20, at the tip of the nose 34.

[0013]

The rear sleeve 32 integrally fitted to the external sleeve 30 and inside the rear sleeve 32 is fixed with a cam housing 44 and an internal sleeve 46. The front end portion of the internal sleeve 46 is threadably engaged with a threaded portion formed on the inner circumferential surface of the rear end portion of the rear sleeve 32, and the internal space of the internal sleeve 46 accommodates the tip 12a (Fig. 1) of the writing body 12 when the holder body 12 is protected by the cap 14.

[0014]

A stepped part 44a (see Fig. 3) of a cam housing 44 is

interposed between the front end of the inner cap 46 and a step portion 32a of the rear sleeve 32. As shown in Fig. 3, the cam housing 44 is formed with a cam face 44b on the front end side and formed with a rib 44d projecting in an axial direction and opposing to the cam face 44b in a circumferential direction. The rib 44d is engaged into a recess portion 32c formed in the corresponding portion of the rear sleeve 32 so that the cam housing 44 is prevented from rotating relative to the rear sleeve 32, thereby the cam housing 44 are integral to the rear sleeve 32. The inner circumferential surface of the rear sleeve 32 is formed with a cam face 32b similar to and corresponding to the cam face 44b of the cam housing. When the cam housing 44 is fixed to the rear sleeve 32, there is a clearance between the cam face 32b and the cam face 44b in the axial direction, and the clearance constitutes a cam surface 48. The cam path 48 is substantially V-shaped as the expansion plan view of Fig. 4 shows, and its projecting end is positioned toward the tip. At this projecting end is formed an engaging part 44c constituting a small dent in the cam face 44b.

[0015]

The slide receptacle 40 threaded into the nose 34 extends in the axial direction within the casing 20. As shown in Figs. 5 and 10, at the rear end of the slide receptacle 40 are formed engaging pieces 40a and 40a, which

are engaged with a stepped part 44a of the cam housing 44 from an inside thereof, to be rotatable relative thereto. Farther inside than the engaging pieces 40a and 40a in the radial direction is fitted a head part 46a of the internal sleeve 46 to prevent the engaging pieces 40a and 40a from falling inwardly in the radial direction and thereby not to let the engaging pieces 40a disengage the stepped part 44a (see Fig. 6).

[0016]

Further, on the slide receptacle 40 are formed as many guide grooves 40b as the holders 21 and 22 to be accommodated extending in the axial direction, and the holders 21 and 22 are arranged within the respective guide grooves 40b to be movable in the axial direction. Namely, at the rear end of each of the holders 21 and 22 is provided a holder receptacle 50 as the supported section. The holder receptacle 50 is supported by a slider 52, which is the supporting section 23, and the slider 52 is slidably fitted into the guide groove 40b of the slide receptacle 40 (see Fig. 7). As shown in Figs. 8 and 9, the tip of the holder receptacle 50 is inserted into a ballpoint stem, which is the holder 21 or 22, and its rear part constitutes a spherical part 50a. On the other hand, a concave part 52a for bearing the spherical part 50a is formed on its inner circumferential face of the slider 52. The spherical part 50a and the concave part 52a constitute a spherical

bearing to rotatably bear the holder receptacle 50 with a freedom of angle in relation to the slider 52.

[0017]

The slider 52 is formed with projections 52b on outer circumferential surface. The projection 52b of the slider 52 can slide along this cam path 48. To ensure the contact of the slider 52 with the cam path 48, a return spring 54 intervenes between the slider 52 and a partition wall 40c of the slide receptacle 40, so that the return spring 54 pushes the slider 52 backward. The return spring 54 prevents a rattle of the slider 52 as the projections 52b of the slider 52 is engaged into the cam path 48 formed by the cam face 44b of the cam housing 44 and the cam face 32b of the rear sleeve 32 and sandwiched between the cam faces 44b, 32b. If the cam path 48 is formed precisely, the return spring 54 can be omitted. As shown in Fig. 10, through holes 40d and 40d are formed on the partition wall 40c to let the holders 21 and 22 pass through, and each of the through holes 40d is not circular but elliptical, longer in the radial direction.

[0018]

The above-described cam path 48 and the projection 52b of the slider 52 include the feed mechanism 24, and the nose 34 and the rear sleeve 32 enabled to rotate in relation to each other include the manipulating mechanism 26.

[0019]

The tips of both holders 21 and 22 of the composite

holding device 14 configured as described above are positioned inwardly of the fore end opening 34a of the nose 34, and housed substantially overlapping each other in the axial direction in the state illustrated in Fig. 1. In this state, the projection 52b of the slider 52 supporting the holder receptacle 50 of each of the holders 21 and 22 is in a rear position of the cam path 48 (e.g., the position of accommodation in Fig.4).

[0020]

The use of either one of the holders 21 and 22 is accomplished in the following manner. Namely, the nose 34 is turned in a prescribed direction in relation to the rear sleeve 32, which causes the slide receptacle 40 integrated with the nose 34 to be turned in the prescribed direction in relation to the rear sleeve 32. As the sliders 52 and 52 fitted into the guide grooves 40b of the slide receptacle 40 also turn integrally, each of the projections 52b of the sliders 52 moves in the axial direction along the cam path 48, and one of the two sliders 52 advances, whereas the other recedes. If the holder receptacle 50 of the holder 21 is supported by the advanced slider 52, then the holder 21 will advance together with the slider 52. Then, the spherical part 50a of the holder receptacle 50 of the advanced holder 21, as the receptacle advances, comes into sliding contact with the concave part 52a and turns from the state in which the holder receptacle 50 is on the same straight line as the slider 52 is to become inclined and follow the movement of the tip of the holder 21. The

tip of the holder 21, while moving along the inner circumferential face of the nose 34, projects out of the fore end opening 34a, which is on the axial line. The projection 52b of the slider 52 having advanced along the cam path 48, when engaged with the engaging part 44c at the tip of the cam path 48, stops in the position to which it has advanced (e.g., the advanced position in Fig. 4). In this way, the tip of the holder 21 supported by the slider 52 is held in a state of projection from the fore end opening 34a, as shown in Fig. 11, in which the holder 21 becomes usable. The slider 52 supporting the holder receptacle 50 of the other holder 22 recedes along the cam path 48, and stops in the receded position shown in Fig.4.

[0021]

On the other hand, if the nose 34 is turned from the state shown in Fig. 1 in the direction reverse to the foregoing prescribed direction in relation to the rear sleeve 32, then the holder 22 will advance, whereas the holder 21 will recede. Then, the spherical part 50a of the holder receptacle 50 of the advanced holder 21, as the receptacle advances, comes into sliding contact with the concave part 52a of the corresponding slider 52 and turns in relation to the slider 52 to become inclined and follow the movement of the tip of the holder 22. The tip of the holder 22, while moving along the inner circumferential face of the nose 34, projects out of the fore end opening 34a, which is on the axial line, as in the above-described movement of the tip of the holder 21.

[0022]

When the advanced holder 21 or 22 is to be receded, turning the nose 34 in a direction reverse to the direction in which it was turned when the holder 21 or 22 was to be advanced in relation to the rear sleeve 32, causes the projection 52b of the slider 52 supporting the advanced holder to recede in the axial direction along the cam path 48 and the projection 52b of the slider 52 holding the receded holder advances in the axial direction along the cam path 48, thereby to return to the state shown in Fig.1.

The relationship between the spherical part 50a and the concave part 52a also returns to its original state.

[0023]

Thus, the holders 21 and 22 can smoothly project and recede without being caught by the casing 20 or meeting resistance. Since the holders 21 and 22 can therefore project smoothly without having to be bent in themselves, hard metallic pipes can be used for the holders 21 and 22 and the holders 21 and 22 can be kept short enough to be accommodated in the cap 14 in the embodiment.

[0024]

Fig. 18 illustrates a second embodiment of the present invention, wherein the same members as in the first embodiment are assigned respectively the same reference numbers, and their detailed description will be omitted.

In the second embodiment, one of holders 62 is a mechanical pencil stem and the other holder 22 is a

ballpoint stem as in the first embodiment. The holder 62, which is a mechanical pencil stem, is configured of a lead tank 62a for accommodating leads, a coupling 62b to be linked to the lead tank 62a, a chuck 62c whose rear end is to be pressed into the coupling 62b, a chuck ring 62d to be fitted around the head of the chuck 62c, a sleeve 62e to regulate the rear end position of the chuck ring 62d, a return spring 62f intervening between the sleeve 62e and the coupling 62b, a nose 62g to be connected to the sleeve 62e, and a packing 62h provided within the nose 62g.

[0025]

Further, in this embodiment, a cam path 48' formed of a cam face 32'b of a rear sleeve 32' and a cam face 44'b of a cam housing 44, as shown in Figs.13 and 14, is divided into a cam path part 48'-1 on which the slider 52 corresponding to the mechanical pencil stem 62 slides and a cam path part 48'-2 on which the slider 52 corresponding to the ballpoint stem 22 slides. In a position somewhat rearwardly from the tip of the cam path part 48'-1, an engaging part 44'c, which is formed, for example, by a small dent, is formed on the cam face 44'b, and in the tip position of the cam path part 48'-2, an engaging part 44'd, which is formed, for example, by a small dent, is formed on a cam face 44'b.

[0026]

In this embodiment, the tip of the ballpoint stem 22 is projected similarly as in the first embodiment. When the mechanical pencil stem 62 is to be projected, the nose 34 is turned in a prescribed direction in relation to the rear sleeve 32', causes the slide receptacle 40 integrated with the nose 34 to turn in the prescribed direction in relation to the rear sleeve 32'. As the sliders 52 and 52 fitted into the guide grooves 40b of the slide receptacle 40 also turn integrally, each of the projections 52b of the sliders 52 moves in the axial direction along the cam path 48'. The projection 52b of the slider 52 supporting the holder receptacle 50 of the mechanical pencil stem 62 advances along the cam path part 48'-1, and the tip of the mechanical pencil stem 62 projects out of the fore end opening 34a of the nose 34. In this operation, when the projection 52b approaches the engaging part 44'c, the nose 62g of the mechanical pencil stem 62 comes into contact with the surrounding around the fore end opening 34a of the nose 34, beyond which it can advance no farther. Further, the lead tank 62a, coupling 62b, chuck 62c and chuck ring 62d advance in relation to the nose 62g and the sleeve 62e, and a lead is fed by a known method. When the force to turn the nose 34 is decreased, the spring forces of the return spring 54 and another return spring 62f cause the projection 52b of the slider 52 supporting the mechanical pencil stem 62 to recede to the engaging part 44'c and, as shown in Fig. 15, the tip of the mechanical pencil stem 62 is held in a position of projecting out of the fore end

opening 34a. Further feeding of the lead by a prescribed length at a time is performed by turning the nose 34 in a prescribed direction and thereby moving back and forth the projection 52b of the slider 52 supporting the mechanical pencil stem 62 between the position of the engaging part 44'c and the tip of the cam path part 48'-1.

[0027]

In this embodiment, the tip of the holder, which is the mechanical pencil stem 62, can smoothly project out of and recede into the fore end opening 34a of the casing 20 without being caught by the casing 20 or meeting resistance as the spherical part 50a of its holder receptacle 50 is borne by the concave part 52a of the slider 52. Furthermore, since the mechanical pencil stem 62 need not be bent, the lead feed mechanism including the chuck can be prevented from damage such as rupture, bending or lead breaking.

[0028]

In addition to the above-described embodiments of the invention, the holder may be provided as a stylus pen stem holding a stylus tip, an eraser stem holding an eraser, a stick glue stem holding a stick glue, or a cosmetic stem holding a cosmetic such as a lipstick. Any of these stylus pen stem, eraser stem and cosmetic stem can be configured similarly to the ballpoint stem. However, where the holder holds an expendable item such as an eraser or a cosmetic, the eraser or cosmetic may be held by a needle and the needle is made feedable like the lead in the mechanical

pencil stem so that the eraser or cosmetic can be fed. Further, although the foregoing description of this embodiment assumed the use of two holders, the number of holders is not limited to two, but obviously the invention can as well be applied to a case in which three or more holders are to be housed in the casing 20. Furthermore, in the foregoing description of this embodiment the supported section provided in each holder is formed as a spherical part and the slider, which is the supporting section, is formed as a concave part to receive the spherical part. However, a converse arrangement in which the slider is formed as a spherical part and a concave part to receive that spherical part is formed on the supported section of the holder also may be used.

[0029]

Further, in the foregoing description of this embodiment, the cap 14 is the composite holding device, and when the cap 14 is removed from the writing body 12, the tip 12a is exposed and is used for writing by putting the cap 14 over the rear end of the writing body 12, as shown in Fig. 16.

[0030]

However, the possible combinations are not confined to these, and indeed a writing tool may obviously include only the composite holding device described with reference to the conventional structure.

[0031]

[Effects of the Invention]

According to the present invention, because the supported section of the holder is rotatably supported to the supporting section, when the tip of the holder projects out of the fore end opening at the tip of the casing, the holders need not be highly bendable, the holder tip can project out of the fore end opening of the casing without causing the holder itself to be substantially bent or meet significant resistance. Therefore, since the holders need not be highly bendable, the material or length of the holders is not subjected to any major constraint, thereby resulting in an enhanced design freedom.

[Brief Explanation of the Drawings]

FIG.1 is an overall view of a writing tool with a cap in which a composite holding device built according to a first embodiment of the present invention.

Fig. 2 is an expanded view of the cap in Fig. 1

Fig. 3 is a perspective view of the cam housing and a partial broken perspective view of the rear sleeve.

Fig. 4 is an enveloped view of the cam path formed of the cam face of the cam housing and the cam face of the rear sleeve.

Fig. 5 is an exploded perspective views of the slide receptacle, slider, holder receptacle, and holder.

Fig. 6 is a section of an engaging piece of the slide receptacle as viewed along line 6-6 in Fig. 1 (partly abridged for brevity of description).

Fig. 7 is a section of the slide receptacle, holder

receptacle, and slider as viewed along line 7-7 in Fig.1 (partly abridged for brevity of description).

Fig. 8 is the slider and holder receptacle as viewed in the direction of arrow 8 in Fig. 1.

Fig. 9 is a plan view of the holder receptacle.

Fig. 10(a) is a longitudinal section of the slide receptacle, and Fig. 10(b) is a section of the same as viewed in the direction of arrow b;

Fig. 11 is a longitudinal section of a state in which one holder is projected in the first embodiment of the invention;

Fig. 12 is an overall view of a writing tool with a cap in which a composite holding device built according to a second embodiment of the present invention.

Fig. 13 is an enveloped view of the cam path formed of the cam face of the cam housing and the cam face of the rear sleeve.

Fig. 14 is an explanatory perspective view of the cam path of the second embodiment of the invention.

Fig. 15 is a longitudinal section of the second embodiment of the invention in a state in which a mechanical pencil stem, which is one of the holders is projected.

Fig. 16 is a state of use of the writing tool in the first embodiment of the invention.

[Reference Numerals in the Drawings]

10 writing tool

14 cap
20 casing
21, 22 ballpoint stem (holder)
24 feed mechanism
26 manipulating mechanism
48 cam path (feeding mechanism)
50 holder receptacle (supported section)
50a spherical part
52 Slider (supporting section)
52a concave part
52b projection (feeding mechanism)
48' cam path (feeding mechanism)

[Document Name] Abstract

[Abstract]

[Object]

An object of the invention is to provide a composite holding device enabling a holder among a plurality of accommodated holders to be advanced and its tip to be smoothly projected out of the fore end opening of a casing without being constrained by the material or dimensions of the holders, and according to making it possible to enhance freedom in the choice of the material or the dimensions of the holders.

[Construction]

A supporting receptacle 50 for supporting the holders 21,22 in the casing 20, is formed with a spherical bearing 50a, a slider 52 supporting the supporting receptacle 50 is formed with a concave part 52a receiving the spherical bearing 50a. The projection 52b of the slider 52 is slidably engaged with a cam path 48. When the nose 34 is rotated with respect to the rear sleeve 32, one of the projections 52b of the sliders 52 advances in the axial direction along the cam path 48, then, as the receptacle advances, the spherical part 50a comes into sliding contact with the concave part 52a and turns from the state in which the holder receptacle 50 is on the same straight line as the slider 52 is to become inclined and follow the movement of the tip of the holder 21.

[Selected Drawing] Fig. 2